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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,202	07/09/2003	Christopher W. Gabrys	IG2258US	3065
27410	7590	02/07/2005	EXAMINER	
J. MICHAEL NEARY 542 SW 298TH STREET FEDERAL WAY, WA 98023			CUEVAS, PEDRO J	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/617,202

Applicant(s)

GABRYS, CHRISTOPHER W.

Examiner

Pedro J. Cuevas

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/7/03.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,932,935 A to Clifton et al. (prior art document submitted by applicant).

Clifton et al. clearly teaches the construction of an energy storage flywheel emergency power source and methods, comprising:

a flywheel (10) that is supported for rotation about an axis on a bearing system and a motor-generator (1) having a stator and a rotor (6) coupled with said flywheel;

said motor-generator having multiple stationary armature windings (9) and a field coil (2);

said field coil generates flux that passes through said armature windings as said rotor rotates;

a rectifier (982) connected to said primary power for delivering rectified primary power to a DC buss (cables to which monitor 978 is connected);

an inverter (984) connected to said DC buss for converting power from said DC buss to output power to said load;

a synchronous inverter (not shown but taught in column 16, lines 21-27)  
for delivering synchronized power to excite said armature windings during  
recharging of said flywheel; and

a field controller (980) for maintaining power to said field coil during  
standby operation such that the current to said field coil remains substantially  
constant during a period including immediately before an interruption of primary  
power and immediately after an interruption of Primary Power;

whereby said field controller maintains power to said field coil when said  
primary power is not interrupted such that the back emf of said armature windings  
is equal to at least 75% of the voltage of said DC buss.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all  
obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2-8, and 10-20 are rejected under 35 U.S.C. 103(a) as being unpatentable  
over U.S. Patent No. 5,932,935 A to Clifton et al. (prior art document submitted by  
applicant) in view of U.S. Patent No. 4,656,576 to Kwarabayashi.

Clifton et al. disclose the construction of an energy storage flywheel emergency  
power source and methods as disclosed above.

However, it fails to disclose a speed sensor for monitoring the rotational speed of  
said flywheel and varying electrical power to said field coil to maintain a substantially

constant back emf in said armature windings during an interruption of said primary power.

Kawarabayashi teach the construction of a control system for a chassis dynamometer comprising a speed sensor (5) for the purpose of providing a measured speed value of shaft (3) to the feed forward controller (11) and the error function generator circuit (12), so that the integrated value of an error between a predicted output value of the dynamometer (2) and a desired value becomes zero.

It would have been obvious to one skilled in the art at the time the invention was made to use the speed sensor disclosed by Kawarabayashi on the energy storage flywheel emergency power source disclosed by Clifton et al. for the purpose of providing a measured speed value of a shaft to a controller and an error function generator circuit, so that the integrated value of an error between a predicted output value and a desired value becomes zero.

5. With regards to claim 3, 5-6, 13, and 18-19 Clifton et al. in view of Kawarabayashi discloses:

the computing the control signal of the power converter using the steepest descent method corresponding to fluctuations of acceleration or deceleration (column 3, lines 54-59), which allows the field controller to vary the electrical current to the field coil in an approximately inverse linearly relationship with the rotational speed of the flywheel;

said armature windings are located in a magnetic air gap formed between two surfaces of said rotor that rotate together;

said flux crosses only a single magnetic air gap in said motor/generator.

6. With regards to claims 4, 7-8, 11-12, 14-17, and 20, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select:

a field coil having a weight  $W_{fc}$ , and an inductance  $I_{fc}$ ;

a flywheel having a weight  $W_{fw}$ , and a second output power capability  $P$ ;

and

armature windings having an individual phase inductance  $I_{ap}$ ;

wherein:

$$W_{fc}/W_{fw} > 0.25;$$

$$W_{fcg} > 0.60; \text{ and}$$

$$I_{fc}/I_{ap} > 25,000$$

since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

### *Conclusion*

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pedro J. Cuevas whose telephone number is (571) 272-2021. The examiner can normally be reached on M-F from 8:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Pedro J. Cuevas  
February 2, 2005

  
**DARREN SCHUBERG**  
SUPERVISORY PATENT EXAMINER  
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